

p. 2-3) for explanation of location number system. Depth to bedrock intercept; where no bedrock found, depth is to bottom

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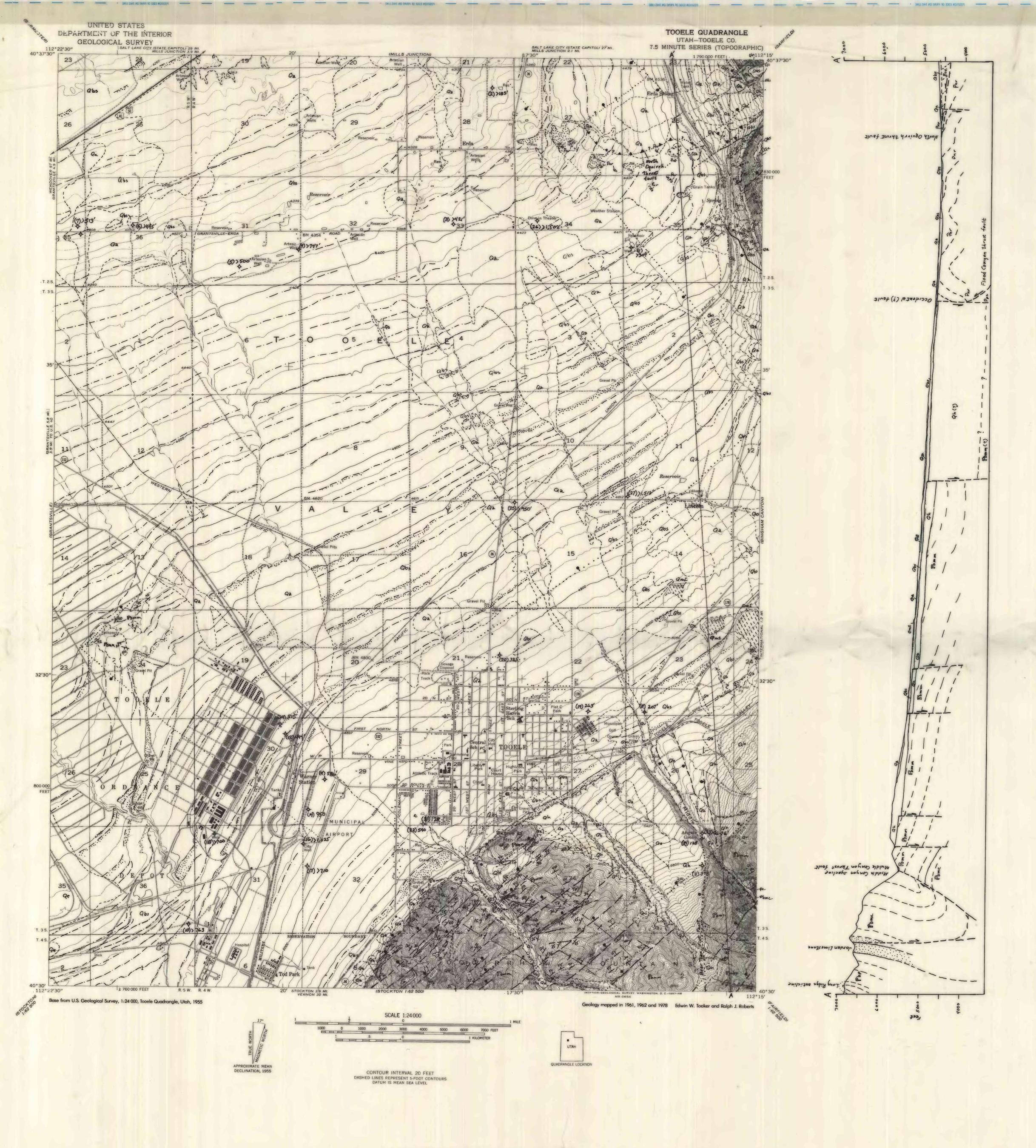
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U.S. Geological Survey OPEN-FILE REPORT

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature.



UNCONFORMITY Qbs UNCONFORMITY Pleistocene UNCONFORMITY 2. Sequence of Flood and Barneys Canyons 4. Bingham sequence 2/Jordan Limestone marker bed at the base of the Clipper Ridge DESCRIPTION OF MAP UNITS Mine tailings deposits EOLIAN DEPOSITS (Holocene) -- Post-Lake Bonneville windblown sand and silt in dune and blanket deposits of variable thickness, ranging from 0.3 to 3.0 m (1 to 10 ft) thick, derived mainly from the nearby mine tailings at Bauer, Utah, in the Stockton (15') ALLUVIUM (Holocene) -- Post-Lake Bonneville unconsolidated alluvial fan deposits along the margin of the Oquirrh Mountains, and broad thin blanket deposits overlying Lake Bonneville deposits in Tooele Valley. Thickness of deposits is variable and estimated to range from less than 0.3 m (1 ft) on the lower periphery of fans to as much as 6.1 m (20 ft) or more locally near the upper parts of fans. Deposits consist of mud, silt, sand, and some coarser detrital material derived from the mountains; in part, deposits are reworked from older unconsolidated deposits ALLUVIUM (Holocene) -- Undifferentiated unconsolidated stream gravel, sand, and silt deposits within the Oquirrh Mountains. Thickness is variable, and while unmeasured it is estimated to be generally less than  $1.5\ \mathrm{m}\ (5\ \mathrm{ft})$ , except in deeply filled channels such as that in Middle Canyon. Merges with Lake Bonneville lacustrine deposits and younger alluvial deposits at the margins of the mountains COLLUVIUM (Holocene) -- Unconsolidated talus, gravel, and boulder deposits locally accumulated in steep canyons, along prominent Lake Bonneville shorelines, and in irregular patches on upper mountain slopes. Generally consists of angular to subrounded clasts of 3 m (1 ft) or less to as much as several meters or a few tens of LAKE BONNEVILLE DEPOSITS (Pleistocene) -- Undifferentiated and unconsolidated thin layers of silt, sand, and gravel that occur as shoreline and lake bottom deposits (Eardley and others, 1957). Prominent sand and gravel bar or spit deposits, shown by stipple pattern, commonly are the sites of borrow pits. Minor lake level stands, conspicuous on aerial photographs as color bands, are shown by dot-and-dash lines. Major stillstands of the lake, as denoted by more extensive lakeshore sand and gravel deposits at erosional notches along the mountain front, occur at about the 1,585 m (5,200 ft) elevation (Bonneville level), about the 1,463 m (4,800 ft) elevation (Provo level), and about the 1,341 m (4,400 ft) elevation (Stansbury level). Locally the deposits are cemented by calcareous tuffa. The maximum thickness of these deposits is unknown because Qbs cannot be differentiated from Qh in drilled well records, but the Lake Bonneville deposits may be a few tens of meters (hundreds of feet) thick adjacent to the northeast-trending normal faults bordering the range. Deposits probably thin to a few meters (tens of feet) thick outward from the range. Beach sand and gravel bars and spits may attain a thickness of 15 to 30 m (50 to 100 ft) where observed in gravel pits HARKERS ALLUVIUM (Pleistocene) -- Undifferentiated, partly dissected, unconsolidated coarse fanglomerate deposits at the mouths of major canyons along edges of the Oquirrh Mountains that project basinward beaches and locally faulted and consist of unconsolidated, poorly sorted, angular to rounded boulders, coarse to fine gravel, sand, silt, and mud assigned to the Harkers Alluvium (Tooker and Roberts, 1971c). The thickness varies from place to place, and its maximum is unknown, but thins away from the mountains; at least 76 m (250 ft) are exposed at the mouth of Middle Canyon, and 33 m (110 ft near the mouth of Bates Canyon. Wells that bottom unconsolidated gravels at depths of as much as 450 m (1,500 ft) in the quadrangle (which may include some thin cover Qbs deposits) are located on the maps, and thickness of as much as 2,438 m (8,000 ft), north and west of this area in the Tooele Valley graben were reported by Cook and others (1966). The formation unconformably overlies sedimentary rocks of Paleozoic age, and is unconformably succeeded by deposits of Quaternary age. The contact along the Lake Bonneville shoreline at and elevation of about 1,585 m (5,200 ft) commonly is the lower terminous of exposures; however, the formation crops out also in lower slopes above an elevation of 1,493 m (4,900 ft) near the mouth of Bates Canyon as a result of Basin and Range faulting. Lower slopes and lake level surfaces locally also contain many large remnants of the fans whose lag boulders are coated with desert varnish. The source materials, mostly quartzite, calcareous quartzite, and silicified limestone, were derived from outcrops in the Oquirrh Mountains INTRUSIVE PORPHYRITIC DIKES AND SILLS (Oligocene) -- Undifferentiated small dikes and sills occurring within a northeast-trending zone in the exposures of the Markham Peak Member of the Bingham Mine Formation. These intrusive bodies are 1 to 5 m (3 to 15 ft) thick, mainly tan or rusty-brown to light-gray medium- to dark-gray quartz monzonite to quartz latite porphyries, which are generally well weathered and poorly exposed along strike, are intermittently terminated in part because of northeast-trending normal faults. The rocks consist of medium to large potassium feldspar, quartz, biotite, and plagioclase phenocrysts in a groundmass of microcrystalline plagioclase laths, potassium feldspar, quartz, hornblende, and biotite. The most prominent is a sill that crops out intermittently at 1,585 m (5,200 ft) elevation southwest of Two O'Clock Hill, on the south side of Settlement Canyon, east of One O'Clock Hill, and in the Valley east of Little Mountain; it has been dated as 38.6 m.y. (million years) (Moore, 1973) SEQUENCE OF FLOOD AND BARNEYS CANYONS FORMATION OF NELSON RIDGE (Permian) -- Interlayered medium- to thick-bedded, reddish-brown to slate-gray weathering, tan to brownish-gray orthoquartzite, calcareous quartzite, and cherty limestone exposed on the western nose of Nelson Ridge, south of the mouth of Bates Canyon. The thickness of the unit has not been measured, but is estimated to be at least 609 m (2,000 ft) thick where exposed on the western nose of Nelson Ridge; the upper and lower contacts, where exposed in the Bingham Canyon quadrangle, are along thrust faults. Steeply dipping, tightly folded, locally overturned, often massive, highly fractured, brecciated, and (of) altered beds striking generally northeast comprise a structural plate that lies between the Pass Canyon and North Oquirrh thrust faults. In the Bingham Canyon quadrangle this sequence appears to overlie the Bingham and underlie the Rogers Canyon sequences tectonically. diagnostic fossils have been observed, but these rocks may be consanguinous with some of the rocks of Permian age in Barney's Canyon, described by Welsh and James (1961), which are part of a plate that tectonically underlies the Bingham sequence; these relations remain to be clarified SEQUENCE OF PASS CANYON OQUIRRH GROUP FORMATION OF PASS CANYON (Permian) -- Interlayered medium- to thick-bedded, locally brecciated, dark-brown to tan to reddishbrown sandstone, calcareous sandstone, quartzite, and thin discontinuous or sheared light-gray sandy limestone of (Bingham Canyon quadrangle), are isoclinally folded, the base of the folded sequence is overturned to the northeast, the upper part is overturned to the southwest. The unit does not crop out in this quadrangle, but is postulated in cross section; these rocks are exposed primarily in the Bingham Canyon quadrangle in the lower parts of Pass Canyon, where they appear to be partly altered, are locally sheared-out along strike, and are more structurally deformed than the overlying thrust plate, which consists of the Formation of Nelson Ridge. The thickness of the Formation of Pass Canyon has not yet been measured; estimates will vary, depending on where observed, because of the intense deformation in this sequence

CORRELATION OF MAP UNITS

PRELIMINARY GEOLOGIC MAP OF THE TOOELE QUADRANGLE (7 1/2 MINUTE) TOOELE COUNTY, UTAH